92-04358/

MEETING THE NEEDS OF THE ENVIRONMENT
ENVIRONMENTAL PROTECTION's ROLE

Paper presented at the:

Municipal Planning Engineers Conference
Yellowknife, NWT
December 4, 1991

Prepared and presented by:

Ed Collins, P. Eng.
A/Chief, Environmental Engineering
Environmental Protection
NWT District Office
Yellowknife, NWT

Report CP(EP)WNR91-92-5

MEETING THE NEEDS OF THE ENVIRONMENT
ENVIRONMENTAL PROTECTION's ROLE

INTRODUCTION

Environment Canada is a department of the federal government and contains three services; Canadian Parks Service, Atmospheric Environment Service, and Conservation and Protection Service. Environmental Protection is part of the C & P Service along with the Canadian Wildlife Service and the Inland Waters Directorate. This presentation will describe the role of Environmental Protection in protecting the environment.

EP is responsible for 2 pieces of legislation; the Canadian Environmental Protection Act (CEPA), and the pollution prevention provisions of the Fisheries Act. There are 3 major programs in place to administer these Acts:

- Environmental Assessment (giving and receiving advice)
- Enforcement and Compliance
- Environmental Emergencies (reporting and responding to spills)

CEPA takes a substance-by-substance approach to regulating toxics. If there is no CEPA regulation for a particular substance, then EP has no restrictions on that substance. Often, other federal or territorial legislation does regulate these substances.

In contrast, the Fisheries Act takes a more general approach to pollution control. Section 36, subsection (3) states, in plain English, that it is a violation of the Fisheries Act to deposit a deleterious substance in water frequented by fish unless the deposit is authorized by regulations. Environment Canada refers to this as the "general prohibition".

There are two phrases in the general prohibition which require definition. In the Act, "water frequented by fish" is defined as "... all internal waters of Canada". The definition of "deleterious substance" is much more involved and includes substances that may render the receiving environment deleterious to fish or fish habitat, or to man's use of the fish. Many instances of case law have refined the definition of deleterious to include situations such as mortality and tainting, but there is no more specific definition in the Act. This topic of deleterious will be discussed later in this presentation.

What does this mean in the NWT? At present, there are only 2 facilities in the NWT with effluents that are specifically regulated under the Fisheries Act. All other facilities including municipalities are expected to comply with the "general prohibition" unless their deposits are regulated under another federal Act.

EP's APPROACH

A new draft Compliance Policy for the Fisheries Act defines in general terms the federal government's expectations regarding compliance with the Fisheries Act.

The "Guiding Principles" listed in the Policy include the following statements:

- Compliance with the ... pollution provisions and their accompanying regulations is mandatory; and

- Enforcement personnel throughout Canada will apply the provisions and regulations in a manner that is fair, predictable, and consistent.

We are now developing an approach (consistent with the rest of Canada) to use in applying the Compliance Policy to effluents in the NWT. The 2 major requirements in developing such an approach are:

- achieving a more measurable definition of "deleterious" than the definition found in the Fisheries Act; and
- setting priorities based on effluents that have the greatest potential for environmental damage.

DEFINING "DELETERIOUS"

Various regulatory agencies throughout the world utilize bioassays to some extent in determining the deleteriousness of an effluent (Ontario MOE MISA program, USEPA Clean Water Act, US Army Corps of Engineers assessment process). The proposed Pulp and Paper Effluent Regulations under the Fisheries Act also contain a requirement for bioassay testing of the effluent.

For municipal effluents, we are proposing similar bioassay testing requirements to those found in the Pulp and Paper Regulations. The Pulp and Paper Regulations specify separate bioassay tests for fish and invertebrates.

In the fish bioassay, rainbow trout are placed in a sample of undiluted effluent for a period of 96 hours. If 50% or more of the fish die, the effluent fails the test. The test for invertebrates involves Daphnia magna being placed in undiluted effluent for a period of 48 hours. As in the fish test, if 50% or more of the daphnia die, the effluent fails the test.

SETTING PRIORITIES

Effluents with a greater potential for environmental harm will be given higher priority, and a rational system for determining priorities is presently being developed. The criteria to be used for ranking effluents are: sensitivity of the receiving environment; and characteristics of the effluent.

Advisory Role

One of the problems in setting priorities is the shortage of information on municipal effluents and treatment systems in the NWT. To address this lack of information, Environment Canada is proposing technical studies to focus on 2 areas.

Technical Studies

1) Effluent Characterization

Office studies will be conducted to amass all the information available on receiving waters, and existing municipal sewage characteristics and treatment systems in the NWT. This will be done in cooperation and consultation with the NWT Water Board, DIAND, MACA, Renewable Resources and DFO.

It is unlikely that existing information will be adequate to enable the formation of a priority list. In the coming summer field season, selected communities will be inspected to increase EP's familiarity with the treatment systems in those municipalities, and to sample raw and treated sewage for laboratory analysis. Toxicity of the effluents will be tested and attempts will be made to correlate toxicity with the typical pollutants found in municipal sewage.

2) Technology Assessment

Most of the information available on sewage treatment systems is directed towards southern climatic conditions and normal strength sewage. Research will be done to determine which (if any) treatment systems would be capable of producing a non-deleterious effluent under northern conditions from the typical high strength sewage produced in communities using trucked services. Technology assessments will be done in cooperation with other interested agencies.

Advice to Regulatory Agencies

Environmental Protection is a member of the Technical Advisory Committee to the NWT Water Board. We regularly provide advice in the drafting of Water Licenses and in other water pollution issues.

1) EP will recommend that all Water Licenses be amended to include bioassay testing and possibly 1 or 2 additional parameters. The information gathered from the additional testing will complement the proposed technical studies in the assessment of the requirements for each facility to comply with the general prohibition of the Fisheries Act.

2) During the process of renewing or issuing of new Water Licenses, Environmental Protection will also recommend that effluents be non-deleterious to fish as determined by bioassay

testing of effluents. We would recommend that the License allow a reasonable amount of time for the Licensee to provide a plan for producing a non-deleterious effluent, and that the compliance plan be implemented within a reasonable time.

For effluent that has been determined to be high priority, we would expect a shorter amount of time for the development and implementation of the plan.

Enforcement Role

Despite our efforts to achieve compliance through the advisory role, situations may arise which will require enforcement action. Two different scenarios are envisioned, and they will be handled differently.

Authorized Discharges

Environment Canada is not in the business of enforcing Water Licenses. Once Environment Canada's requirements under the Fisheries Act are incorporated into Water Licenses, we do not foresee the need to regularly enforce the Fisheries Act.

Unauthorized Discharges

There are two categories of unauthorized discharges: unexpected releases or spills; and routine discharges that are not authorized by a regulation or Water License. Environment Canada will take the necessary follow-up actions to determine whether a violation occurred, and to ensure that the situation is corrected.

SUMMARY

1. Compliance with the Fisheries Act is mandatory.

2. Environmental Protection recognizes that this will not occur over night.

3. We are developing a rational and phased approach to achieve compliance.

4. We plan to emphasize our advisory role through consultation and cooperation with other interested agencies.